

CLAIMS:

What is claimed is:

1. A distributed power system for a utility grid, comprising:
 - 5 a distributed power source;
 - a temperature measuring device;
 - a power conditioning unit, wherein said power conditioning unit manages a power flow of said distributed power source;
 - 10 a circuit breaker manager controllably connecting to said power grid, and wherein said circuit breaker manager is connected to said power conditioning unit.
2. A distributed power system for a utility grid according to claim 1, further comprising a heat exchanger for recovering heat from said distributed power source.
 - 15 3. A distributed power system for a utility grid according to claim 1, wherein said circuit breaker manager controllably connects individual load branches.
- 20 4. A distributed power system for a utility grid according to claim 1, wherein said utility grid is a local area grid comprising a plurality of distributed power sources.
5. A segmentable distributed power system, comprising:
 - 25 two or more power sources connected in parallel;
 - a power conditioning unit having an output impedance and connecting to each of said power sources on a first side and connecting to a shared load on a second side, wherein said power conditioning system controls said output impedance.
- 30 6. A circuit breaker manager for controlling distributed power between a power source and an external power grid, comprising:

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- a circuit breaker controller;
a plurality of solid state branch circuit breakers controlled by said circuit breaker controller;
a contactor for connecting to said external power grid;
a voltage sensor for measuring said external power grid; and
a means for communicating.
7. A local area grid device for distributed power according to claim 6, wherein said communicating means connects to the Internet.
8. A system for managing a local area grid according to claim 7, further comprising an interface means for connecting said power conditioning unit to a graphical user interface for status, billing, maintenance, and adjustment of system parameters.
9. A method for controlling a local area grid, wherein said grid contains two or more distributed power sources, comprising the steps of:
measuring a grid voltage by each power condition unit;
comparing said grid voltage of each power conditioning unit to a predetermined value;
increasing current output of said power conditioning unit to said local area grid if said grid voltage is less than said predetermined value; and
decreasing current output of said power conditioning unit to said local area grid if said grid voltage is greater than said predetermined value.
10. A distributed power system for a ripple sensitive distributed power source, comprising:
A DC-DC converter serially connecting to said ripple sensitive power source on a first side;
A ripple tolerant power source connecting to said DC-DC converter on a second side;

A phase shifted H-bridge connecting to said second side of said DC-DC converter on a first side;

A DC-AC converter connecting to a second side of said H-bridge; and

A means for forcing ripple sourced from said ripple tolerant power source.